

REMARKS

By this Reply, claims 43, 45, 58, 59, 69, 71, and 81 have been amended, claims 44, 57, 70, and 83 have been cancelled without prejudice or disclaimer of the subject matter contained therein, and new dependent claim 84 has been added. Accordingly, claims 43, 45-56, 58-69, 71-82, and 84 are currently pending in this application. The new and amended claims are fully supported by the application as originally filed, and thus no new matter has been introduced by this Reply.

In the Office Action mailed November 1, 2010, claims 43-83 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 7,364,691 to Barker et al. ("*Barker*") or U.S. Patent Application Publication No. 2007/0290419 to Goodman et al. ("*Goodman*"); claims 43-49, 69-72, and 81-83 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent Application Publication No. 2005/0218569 to Stastny et al. ("*Stastny*"); and claims 43-49, 69-72, and 81-83 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Japanese Patent Publication No. JP 2002-206107A ("JP '107").

I. 35 U.S.C. § 102 Rejections

Applicant respectfully requests the withdrawal of the rejection of claims 43, 45-56, 58-69, and 71-82 under 35 U.S.C. § 102(a) as being anticipated by *Barker*, *Goodman*, or *Stastny* and/or under 35 U.S.C. § 102(b) as being anticipated by JP '107.

A. *Barker, Goodman, and Stastny* do not qualify as prior art under 35 U.S.C. § 102(a) against this application

The present application is an entry into the national stage of International Application No. PCT/AU2005/00139, filed February 3, 2005, under 35 U.S.C. § 371. Accordingly, the present application has an effective U.S. filing date of February 3, 2005.

Barker issued on April 29, 2008. The issue date (April 29, 2008) of *Barker* does not predate the effective U.S. filing date of this application (February 3, 2005).¹ Thus, *Barker* is not available as prior art under 35 U.S.C. § 102(a) against the present application, since it was not “patented or described in a printed publication . . . before the invention . . . by the applicant for patent.” 35 U.S.C. § 102(a).

Goodman published on December 20, 2007. The publication date (December 20, 2007) of *Goodman* does not predate the effective U.S. filing date of this application (February 3, 2005).² Thus, *Goodman* is not available as prior art under 35 U.S.C. § 102(a) against the present application, since it was not “described in a printed publication . . . before the invention . . . by the applicant for patent.” 35 U.S.C. § 102(a).

Stastny published on October 6, 2005. The publication date (October 6, 2005) of *Stastny* does not predate the effective U.S. filing date of this application (February 3,

¹ Applicant notes that the publication of the application that issued into *Barker*, U.S. Patent Application Publication No. 2006/0022388, published on February 2, 2006, which is also after the February 3, 2005, filing date of the present application.

² Applicant notes that *Goodman* is an entry into the national state of International Application No. PCT/AU05/00576, filed April 22, 2005, which published on November 3, 2005. This publication date is also after the February 3, 2005, filing date of the present application.

2005).³ Thus, *Stastny* is not available as prior art under 35 U.S.C. § 102(a) against the present application, since it was not “described in a printed publication . . . before the invention . . . by the applicant for patent.” 35 U.S.C. § 102(a).

B. JP '107 does not disclose or suggest “[a] metallurgical vessel for a molten bath direct smelting process . . . , the vessel comprising . . . a plurality of cooling panels forming an interior lining for at least an upper part of the vessel, each panel comprising a coolant flow tube shaped in a zig-zag formation to form the panel”

An anticipation rejection is proper only if each and every element as set forth in the claim is expressly or inherently described in a single prior art reference. M.P.E.P. § 2131. JP '107 does not expressly or inherently describe, or even suggest, each and every element set forth in independent claims 43, 69, and 81.

Independent claim 43 has been amended to incorporate, among other things, subject matter similar to that of now-cancelled dependent claim 57. Specifically, independent claim 43 recites a metallurgical vessel “for a molten bath direct smelting process having free space above a molten bath and wherein metalliferous material and carbonaceous material are supplied to the bath and smelted to molten iron and slag and wherein gases released from the bath are combusted in the free space.” The vessel includes, among other things:

an outer shell having a plurality of openings, each opening surrounded by a rigid tubular protrusion that is connected

³ Applicant notes that *Stastny* is an entry into the national stage of International Application No. PCT/EP2003/007580, which published as International Application No. WO 2004/018713 on March 4, 2004. However, this publication date is after Applicant's earliest foreign priority date (February 4, 2004). This application claims priority to Australian Patent Application No. AU 2004900544, filed February 4, 2004. A certified copy of Australian priority document was submitted in connection with the present application, as acknowledged in the Office Action Summary.

rigidly to the shell and that protrudes outwardly from the shell; and

a plurality of cooling panels forming an interior lining for at least an upper part of the vessel, each panel comprising a coolant flow tube shaped in a zig-zag formation to form the panel and having internal passages for flow of coolant there through between tubular coolant inlet and outlet connectors, and a plurality of rigid projections for supporting the load of the panel, which projections are connected rigidly to the flow tubes and project laterally of the panel;

wherein the plurality of rigid projections project through said openings in the outer shell and are rigidly connected to outer ends of the tubular protrusions by connections that attach the cooling panel to the outer shell and which seal the openings and support the load of the panel.

JP '107 does not disclose or suggest, among other things, “[a] metallurgical vessel for a molten bath direct smelting process . . . , the vessel comprising . . . a plurality of cooling panels forming an interior lining for at least an upper part of the vessel, each panel comprising a coolant flow tube shaped in a zig-zag formation to form the panel,” as recited in independent claim 43.

JP '107 discloses a configuration and a method for fixing cooling staves to the shell of a shaft furnace. (English translation of JP '107, paragraphs [0016] and [0017].) Specifically, JP '107 teaches that minimizing diameter of shell openings for stove support pipes and thereby avoiding a detrimental reduction in the strength of the shell is facilitated by providing short pipes 9 projecting from the vessel at an inclination. (English translation of JP '107, paragraphs [0023]-[0026].)

JP '107, however, does not disclose or suggest that the staves are formed with a coolant flow tube shaped in a zig-zag formation. Accordingly, JP '107 does not disclose

or suggest “a plurality of cooling panels . . . , each panel comprising a coolant flow tube shaped in a zig-zag formation to form the panel,” as recited in independent claim 43.

Applicant notes that previously pending claim 57 recited “the panels are comprised of coolant flow tubes shaped to zigzag formations to form the panels,” and claim 57 was not rejected under 35 U.S.C. § 102(b) based on JP '107.

Moreover, JP '107 discloses staves for furnaces, not a metallurgical vessel for a molten bath direct smelting process. Thus, JP '107 also does not disclose or suggest a plurality of cooling panels forming an interior lining for at least an upper part of such a vessel. Accordingly, JP '107 does not disclose or suggest a “metallurgical vessel for a molten bath direct smelting process . . . , the vessel comprising . . . a plurality of cooling panels forming an interior lining for at least an upper part of the vessel,” as recited in independent claim 43.

Independent claims 69 and 81, although of different scope, include similar elements to those of independent claim 43 discussed above. For example, independent claim 69 recites a “cooling panel for mounting on an outer shell of a metallurgical vessel so as to form part of an internal lining of that shell, the vessel being suitable for a molten bath direct smelting process . . . , the cooling panel comprising . . . a curved panel body being formed of a single coolant tube shaped to form a zigzag configuration.”

Independent claim 81 recites a “method of mounting a cooling panel on an outer shell of a metallurgical vessel so as to form part of an internal lining of that shell, the vessel being suitable for a molten bath direct smelting process . . . , the cooling panel having a coolant flow tube shaped in a zigzag formation to form the panel.” Thus, for at least

similar reasons to those discussed above with regard to claim 43, claims 69 and 81 are also patentable over JP '107.

For at least the reasons provided above, JP '107 does not expressly or inherently describe, or even suggest, each and every element set forth in independent claim 43. Accordingly, JP '107 does not anticipate independent claim 43 under 35 U.S.C. § 102. Claims 45-49, 71, 72, and 82 are also patentable over JP '107 at least due to their dependence from one of independent claims 43, 69, and 81.

II. New Dependent Claim 84

Applicant also submits that new dependent claim 84 is in condition for allowance. New claim 84 is allowable at least due to its dependency from independent claims 69.

III. Conclusion

Applicant respectfully submits that the pending claims are in condition for allowance.

The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification, claims, and drawings in this Reply, it is to be understood that Applicant is in no way intending to limit the scope of the claims to an exemplary embodiment described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

In view of the foregoing remarks, Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests the reconsideration and reexamination of the application, and the timely allowance of the pending claims.


If the Examiner believes a telephone conversation might advance prosecution, the Examiner is invited to call Applicant's undersigned representative at 202-408-4129.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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